

AMENDMENTS TO THE DRAWINGS:

The attached sheet of drawings includes changes by replacing "figure" with --FIG.-- and replacing a comma with a decimal point in FIG. 3.

Attachment: Replacement Sheet

REMARKS

Claims 1–2, 10, 11, and 16–30 are pending.

Drawing Objection

Applicants are submitting herewith a new drawing to remove the objection. Particularly, applicants have replaced a comma with a decimal point in FIG. 3. Also, Applicants have replaced "figure" where it appears with --FIG--. Consequently, Applicants respectfully submit that this objection should be withdrawn.

Abstract Objection

Applicants have deleted the previous Abstract and attached a new Abstract herewith. Particularly, in the Abstract, and for that matter in the claims, the term "mineral" has been amended to read "metal." Metal oxides are clearly supported in the present specification, for example, page 3, lines 12 - 16. It is respectfully submitted that this amendment clarifies the Abstract, and obviates the objection. Consequently, Applicants respectfully submit that this objection should be withdrawn.

Claim Rejections Under 35 U.S.C. § 112, Second Paragraph

Claims 1, 2, 10, 11 and 16 - 30 stand rejected as allegedly being indefinite. Applicants have amended the claims to remove these rejections. It is again respectfully submitted that revision of the claims to recite that the oxide is of a "metal" obviates any confusion. Consequently, in view of the understanding of one of ordinary skill in the art and the disclosure in the specification, Applicants respectfully submit that these rejections be withdrawn.

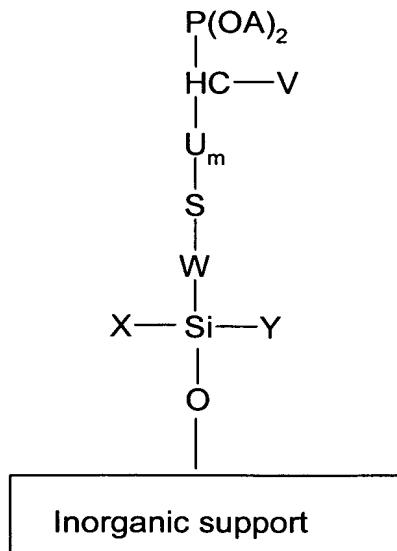
Claim Informalities

Applicants have amended these claims as suggested, and respectfully submit that these amendments do not narrow their scope.

Claim Rejections Under 35 U.S.C. § 102

Claims 1, 2, 10, 11 and 16 - 28 stand rejected as allegedly being anticipated by U.S. Patent No. 6,139,752 (Lindoy). Applicants respectfully traverse these rejections.

The material disclosed by Lindoy presents a structure different from the claimed invention. Particularly, the material of Lindoy uses an inorganic support, preferably composed of silica. Contrarily to Applicants' invention, anchoring the organic group is not realized through the phosphorus atom which means that P-O-M bonds do not exist. According to Lindoy, anchoring of the organic group is realized by grafting of a silica-containing group by reaction with the hydroxyl groups at the surface of the inorganic support. Thus, Si-O-M bonds are created (M being preferably Si). In the material of Lindoy, the phosphorous-containing group does not interact with the surface but is available for various reactions as described below:



X and Y = Cl, Br, I, C_nH_{2n+1}, OC_nH_{2n+1}, OM, W-S-U_mCH(V)-P(O)(OA)₂

W and U = organic spacer

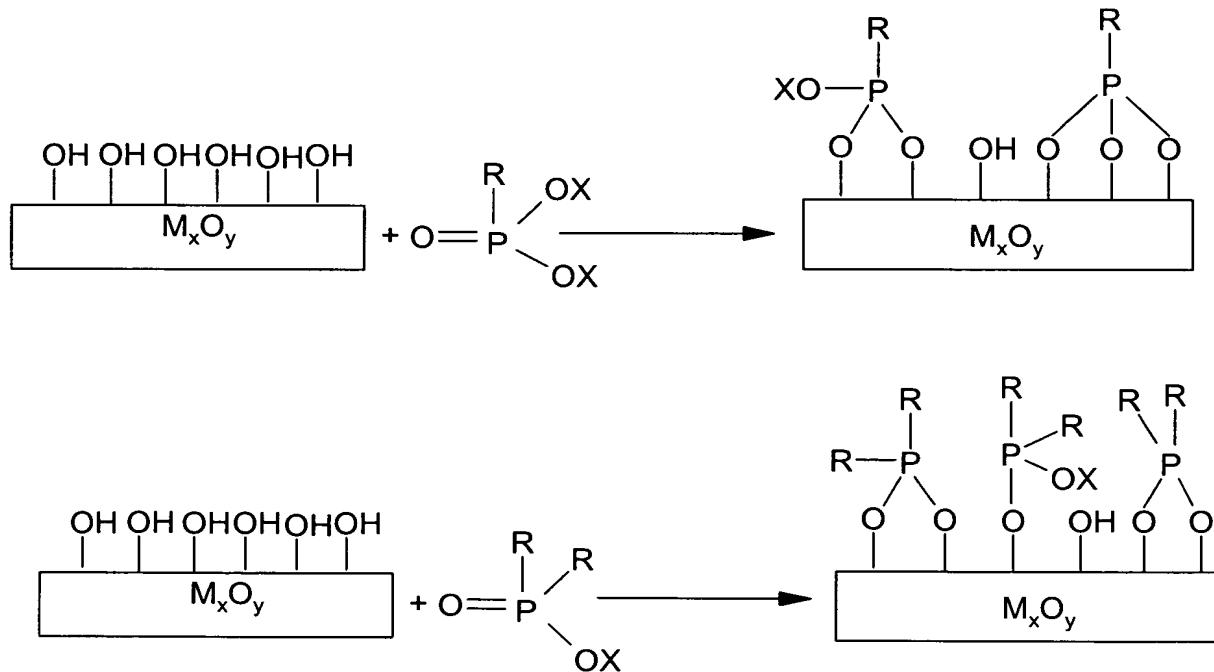
m = 0 or 1

V - H, alkyl or -P(O)(OA)₂

A = H or substituted hydrocarbyl

In the material of Lindoy, the sulphur-containing group is involved in the organic graft only for connecting a silica atom to a phosphorous atom.

In marked contrast, the present invention can provide a compound, whose structure is described by formula (I), that is anchored by reaction between the hydroxyl groups at the mineral support surface and the phosphorous-containing group, enabling creation of P-O-M bonds, as depicted below:



X = H, hydrocarbon group, SiR₃, monovalent cation

As such, the A group (sulphur-containing group) in formula (I) [see, e.g., claim 10] does not interact with the surface of the inorganic support and is available for various reactions.

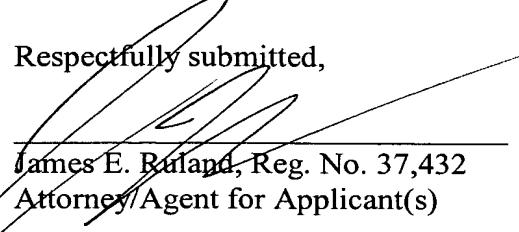
Claims 1, 2, 10, 11 and 16 - 28 stand rejected as allegedly being unpatentable over U.S. Patent No. 4,994,429 (Wieserman). Applicants respectfully traverse these rejections.

First, claim 1 no longer has the qualifier "about", which is cited as the basis for the rejection in the Action. Second, although Wieserman discloses that an unreacted acid group can be a sulphonic acid at column 6, lines 38–40, only Example II at column 12 utilizes an active material in which the unreacted acid group comprises a sulphur atom. This Example II is reproduced as a comparative example in the present specification. See Comparative Example 5, at page 10 of the present specification. In that example, the product has an Al/P mole ratio of 203.8. Thus, Wieserman fails to teach a ratio of the element M to phosphorous of about 15:1–200:1, and thus, fails to teach the present invention, or motivate one of ordinary skill to do so.

In view of the above remarks, favorable reconsideration is courteously requested. If there are any remaining issues which can be expedited by a telephone conference, the Examiner is courteously invited to telephone counsel at the number indicated below.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,


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